

REMARKS

Claims 1-43 were presented for examination, and all claims were rejected. Applicants are hereby amending claim 1 merely to distinctly claim their invention. Applicants are amending claim 29 to correct a typographical error.

Reconsideration of this application and allowance of all pending claims are respectfully requested.

Substance of Interview

Applicants thank the Examiner for his time in conducting a telephone interview on May 23, 2006. Applicants believe that the time was spent effectively and significant progress was made. During the telephone interview, Applicants' attorneys and the Examiner discussed the rejections outstanding in the Examiner's office action, and specifically Young (U.S. Patent No. 6,698,900) and Shimizu (U.S. Patent No. 3,737,214). Applicants are amending claim 1 to clarify that the projection system is for projecting an intermediate image at an object field onto a continuous image field on the display surface. As discussed in the interview, Applicants believe that, for the reasons given in more detail below, none of the cited references show the features of projecting an intermediate image at an object field onto a continuous image field on the display surface, wherein a ratio of a longest image distance to a shortest image distance is at least 1.75. Thus, the claims as amended herein overcome the rejection.

Response to Claim Rejections

The Examiner rejected claims 1-7, 18-19, 25, and 27 under 35 USC § 103(a) as allegedly being unpatentable over Young. This rejection is respectfully traversed.

On a fundamental level, the projection systems by which the claimed invention and Young project an image on the display surface are different. Claim 1 recites "a projection system

for projecting an intermediate image at an object field onto a continuous image field on an interior of the display surface, wherein a ratio of a longest image distance to a shortest image distance is at least 1.75” (emphasis added). Young discloses an imagery projection system having an intense light beam, a scanning deflector module for deflecting the light beam to the coordinates in a pair of Cartesian axes at an exit angle of deflection of the light beam, and a wide angle lens array for increasing the exit angle of deflection by a predetermined factor and projecting the image on the viewing surface. See col. 2, lines 32-44; and col. 5, lines 43-52. Thus, Young deflects a laser to different points on the viewing surface in order to form an image on the viewing surface. Young does not disclose an intermediate image at an object field that is projected (i.e., optically imaged) to the image field. Young uses a fundamentally different approach to produce the final image. Therefore, regardless of whether Young meets the 1.75 ratio limitation, Young does not disclose or suggest “a projection system for projecting an intermediate image at an object field onto a continuous image field on an interior of the display surface” as required by the claimed invention. Hence, Applicants respectfully submit that claim 1 and its dependent claims 2-7, 18-19, 25, and 27 are patentable over Young.

The Examiner rejected the remainder of the dependent claims under 35 U.S.C. § 103(a) as unpatentable over combinations of Young with supporting references Ligon (U.S. Patent No. 6,409,351), Shimizu, Bacs, Jr. (U.S. Patent No. 5,546,139), Idaszak (U.S. Patent No. 6,530,667), Jaulmes (U.S. Patent No. 4,464,029), Courchesne (U.S. Patent No. 6,905,218), and Ikeda (U.S. Patent No. 6,560,041). These rejections are respectfully traversed.

None of the cited references remedy the deficiencies of Young. Specifically, none of the cited references taken either alone or in combination disclose the claimed features of projecting an intermediate image at an object field onto a continuous image field on the display surface,

wherein a ratio of a longest image distance to a shortest image distance is at least 1.75.

Therefore, Applicants submit that the remainder of the dependent claims are patentable over the cited references.

In addition, the Examiner suggests that it would have been obvious to one of ordinary skill in the art to replace the lens system of Young with the lens system of Shimizu to obtain the invention specified in claim 10. Office Action, p. 6. The invention of claim 10 has an image field that subtends an angle of at least 240 degrees. Shimizu does not teach or suggest an image field that subtends an angle of at least 240 degrees. Shimizu merely discloses a fisheye lens having an angle of field as wide as 220 degrees. See Abstract; col. 2, lines 12-15; and col. 3, lines 30-32. Moreover, the cited reference Ligon acknowledges that a fisheye lens was known in the art not to be able to project an image over a spherical screen. Ligon states: "It is known to employ a projector having a "fisheye" lens to directly project a display on a hemispherical screen, however a single such a projector cannot distribute an image over a spherical screen." Col. 1, lines 29-32. As this statement by Ligon demonstrates, there is a teaching away in the prior art from using a fisheye lens to distribute an image beyond a hemispherical screen. Therefore, even if the references could be combined in the manner suggested by the Examiner to yield the claimed invention, the prior art teaches away from attempting such a combination. The references contain no hint or suggestion for combining them in the manner proposed by the Examiner in order to yield the claimed invention.

For all of the above reasons, Applicants respectfully submit that claims 1-43 are patentable over the cited references.

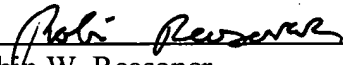
Closing

Applicants believe that the application is in condition for allowance of all claims herein, and therefore an early Notice of Allowance is respectfully requested. If the Examiner believes that for any reason direct contact with Applicants' attorney would help advance the prosecution of this case to finality, the Examiner is invited to telephone the undersigned at the number given below.

Respectfully submitted,
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By: _____


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